

Model Wind Ordinance for Kentucky and Tennessee

Prepared by the Tennessee Valley and Eastern Kentucky Wind Working Group

Draft 4 - October 2011

This model wind ordinance is intended to provide assistance to communities designing a local wind ordinance. Each community may modify the model ordinance to meet their needs, but the community should recognize that the model ordinance was created to assure best practices for responsible wind energy development. The suggested setbacks are intended to protect public safety and mitigate the impacts of noise and shadow flicker. Communities should also understand that the adoption of a local wind ordinance will not preclude a wind energy facility from the requirements of applicable state and federal regulations. Items highlighted are not part of the ordinance, but explanation of figures used in the model ordinance.

1. Title

This ordinance shall be known as the Wind Energy Facility Ordinance for _____[*county or municipality*]

2. Purpose

The purpose of the ordinance is to provide a regulatory scheme for the construction and operation of Wind Energy Facilities in _____[*county or municipality*], subject to reasonable conditions, that will preserve public health and safety. This ordinance will expedite the permitting process for new wind energy facilities to facilitate workforce development and investment opportunities for the community.

3. Definitions

- A. “Applicable Property Owner” is a property owner who will encounter either more than 30 hours of shadow flicker per year or average sound power levels of 55 dBA or greater on the property as a result of the Wind Energy Facility.
- B. “Applicant” is the person or entity filing an application under this Ordinance on behalf of the owner, operator, or participating landowner.
- C. “Environmental Assessment” is a detailed examination of the applicant’s proposal and its local environmental context with an emphasis on avoiding, minimizing, and mitigating adverse impacts.
- D. “Facility Operator” is the entity responsible for the day-to-day operation and maintenance of the Wind Energy Facility.
- E. “Facility Owner” is the entity or entities having controlling or majority equity interest in the Wind Energy Facility, including their respective successors and assigns.
- F. “Non-Participating Landowner” is any landowner not under agreement with the Facility Owner or Operator.
- G. “Occupied Building” is a residence, school, hospital, church, public library or other building used for public gathering that is occupied or in use when the permit application is submitted.
- H. “Participating Landowner” is a landowner under lease or other property agreements with the Facility Owner or Operator pertaining to the Wind Energy Facility.
- I. “Public Road” is a full passage right-of-way.

J. “Shadow Flicker” is the visible flicker effect when rotating turbine blades cast shadows on the ground and nearby structures, causing the repeating pattern of light and shadow.

K. “Wind Energy Facility” is an electric generating facility whose main purpose is to supply electricity, consisting of one or more wind turbines and other accessory structures and buildings, including substations, meteorological towers, electrical infrastructure, transmission lines and other appurtenant structures and facilities. For the purpose of this ordinance, the term does not apply to roof-mounted or building-integrated roof mounting systems.

L. “Wind Energy Facility, Small” is a single system designed to supplement other electricity sources as an accessory use to existing buildings or facilities, wherein the power generated is used primarily for on-site consumption. A small wind energy conversion system consists of a single wind turbine, a tower, and associated control or conversion electronics, and has a total rated capacity of 20 kW or less.

M. “Wind Energy Facility, Medium” is a wind energy conversion system consisting of one or more wind turbine(s), a tower(s), and associated control or conversion electronics, which has a total rated capacity of more than 20 kW but not greater than 100 kW.

N. “Wind Energy Facility, Large” is a wind energy conversion system consisting of one or more wind turbine(s), a tower(s), and associated control or conversion electronics, which has a total rated capacity of more than 100 kW.

O. “Wind Power” is the conversion of wind energy into another form of energy.

P. “Wind Turbine,” or windmill, is a wind energy conversion system that converts wind energy into electricity through the use of a wind turbine generator, and may include a nacelle, rotor, tower, guy wires and pad transformer.

Q. “Wind Turbine Height” is the distance measured from grade at the center of the tower to the highest point of the turbine rotor or tip of the turbine blade when it reaches its highest elevation.

4. Permit Requirement

A. No Medium or Large Wind Energy Facility, or addition of a Wind Turbine to an existing Wind Energy Facility, shall be constructed unless a permit has been issued to the Facility Owner or Operator approving construction of the facility under this Ordinance. Permit application of the expansion shall be based on the total rated capacity, including existing facility, but excluding like-kind replacements.

B. Any physical modification to an existing and permitted Wind Energy Facility that materially increases the size, number, and/or type of Wind Turbines or other equipment, beyond a Small Wind Energy Facility, shall require a permit modification under this Ordinance. Like-kind replacements shall not require a permit modification.

C. No permit is required for Small Wind Energy Facilities, regardless of the number of Wind Turbines.

5. Permit Application for Wind Energy Facilities

A. The permit application shall contain the following:

- i. The applicant and landowner’s name and contact information;

- ii. A narrative describing the proposed Wind Energy Facility, including an overview of the project;
- iii. The proposed total rated capacity of the Wind Energy Facility;
- iv. The proposed number, representative types and height or range of heights of wind turbines to be constructed, including their generating capacity, dimensions and respective manufacturers, and a description of ancillary facilities;
- v. Identification and location of the properties on which the proposed Wind Energy Facility will be located;
- vi. A site plan showing the planned location of all wind turbines, property lines, setback lines, access roads and turnout locations, substation(s), electrical cabling from the Wind Energy Facility to the substation(s), ancillary equipment, building(s), transmission and distribution lines. The site plan must also include the location of all structures and properties, and demonstrate compliance of the setbacks;
- vii. Signature of the Applicant.

Additional requirements for Large Wind Energy Facilities:

- i. Certification of compliance with applicable local, state and Federal regulations, such as FAA and FCC regulations;
- ii. An Environmental Assessment, which shall be provided for review by the applicant to the agency point of contact and to the state clearinghouse for distribution. The applicant must also present a certification of distribution of the Environmental Assessment;
- iii. Certification of a current general liability policy covering bodily injury and property damage with limits of at least \$1 million per occurrence and \$1 million in the aggregate;
- iv. Decommissioning plans that describe the anticipated life of the wind power project, the estimated decommissioning costs in current dollars, the method for ensuring that funds will be available for decommissioning and restoration, and the anticipated manner in which the wind power project will be decommissioned and the site restored; and
- v. Documentation of agreement between Participating Landowner(s) and the Facility Owner/Operator of the Wind Energy Facility.

B. The permit application shall be accompanied with a fee in the amount of \$ _____ for Medium Wind Energy Facilities or \$_____ for Large Wind Energy Facilities.

To keep the cost of energy low for ratepayers, fees should not be excessive. Medium Energy Facilities permitting fees should be lower than Large Wind Energy Facilities permitting fees.

C. Throughout the permit process, the Applicant shall promptly notify _____ [*county or municipality*] of any proposed changes to the information contained in the permit application.

D. Changes to the approved application that do not materially alter the initial site plan may be adopted administratively.

6. Setbacks

Minimum Setback Requirements¹

Wind Energy Facility Type	Occupied Buildings on Participating Landowner Property	Occupied Buildings on Non-Participating Landowner Property	Property Lines on Non-Participating Landowner Property	Public Roads
Medium System	1.1	2.0	1.5	1.5
Large Scale	1.1	2.5	1.5	1.5

1. The setback is calculated by multiplying the required setback number by the Wind Turbine Height. The resulting length is the minimum distance required from the center of the Wind Turbine base to the nearest point on the foundation of an Occupied Building, Property Line, or Public Road.

The setback requirements defined here are meant to be a minimum. Large Wind Energy Facility applicants are required to follow noise and shadow flicker limits in Section 8 below. These limits may require additional setback distance.

- A. Setbacks provisions may be waived if the following conditions are met:
- Property owners may waive the setback requirements for Property Lines and/or Occupied Buildings on the Participating Landowner property and/or Non-Participating Landowner property by signing a waiver that sets forth the applicable setback provision(s) and the proposed changes.
 - The written waiver shall notify applicable property owner(s) of the setback required by this Ordinance, describe how the Wind Energy Facility is not in compliance, and state that consent is granted for the Wind Energy Facility to waive the setback as required by this Ordinance.
 - Any such waiver shall be signed by the applicant, the Participating Land Owner(s) and/or Non-Participating Landowner(s), and recorded in the Deeds Office where the property is located.

7. Noise and Shadow Flicker

This section shall only apply to Large Wind Energy Facilities. Noise and Shadow Flicker issues for Medium Wind Energy Facilities are addressed by setbacks, or will be addressed by an existing noise ordinance.

- A. Audible sound from a Large Wind Energy Facility shall not exceed fifty-five (55) dBA, as measured at any Occupied Building of a Non-Participating Landowner.

55 dBA is the precedent set by other U.S. wind ordinances. 50 dBA is equivalent to the sound power level of a normal household.

B. Shadow Flicker at any Occupied Building on a Non-Participating Landowner's property caused by a Large Wind Energy Facility located within 2,500 ft of the Occupied Building shall not exceed thirty (30) hours per year.

30 hours of actual shadow flicker per year is the precedent set by a German court as acceptable at a neighbor's property. Since the German Court's ruling, a 30-hour-per-year limit has been adopted by multiple communities in the United States. Furthermore, the 30-hours-per-year limit is used for typical expert shadow flicker analysis.

C. Noise and/or Shadow Flicker provisions may be waived if the following conditions are met:

- i. Property owners may waive the noise and/or shadow flicker provisions of this Ordinance by signing a waiver of their rights.
- ii. The written waiver shall notify Applicable Property Owner(s) of the noise and/or flicker limits required by this Ordinance, describe how the Wind Energy Facility is not in compliance, and state that consent is granted for the Wind Energy Facility to waive noise and/or flicker limits as required by this Ordinance.
- iii. Any such waiver shall be signed by the applicant and the Non-Participating Landowner(s), and recorded in the Deeds Office where the property is located.

8. Safety, Environment, and Appearance

A. All structural, electrical and mechanical components of the Wind Energy Facility shall conform to applicable local, state and national codes.

B. Wind Energy Facilities shall use the minimum lighting necessary for safety and security purposes and use techniques to prevent casting glare from the site, except as otherwise required by the FAA or other applicable authority.

C. All access doors to Wind Turbine towers and electrical equipment shall be lockable.

D. Applicants for Large Wind Energy Facilities shall have an action plan developed to mitigate wildlife impacts, consistent with the guidelines of the Fish and Wildlife Services' Wind Turbine Advisory Committee.

E. The applicant shall make reasonable efforts to avoid any disruption or loss of radio, telephone, television or similar signals, and shall mitigate any harm caused by the Wind Energy Facility.

F. Wind Turbines shall not display advertising, except for reasonable identification of the turbine manufacturer, Facility Owner and Operator.

9. Decommissioning

A. The Wind Energy Facility Owner shall have 6 months to complete decommissioning of the Facility if no electricity is generated for a continuous period of 12 months.

B. Decommissioning shall include removing wind turbines, buildings, cabling, electrical components, roads, and any other associated facilities down to 36 inches below grade. Disturbed

earth shall be re-seeded with native grasses and returned to a condition comparable to adjacent land.